Let V^{Nj} and V^{Sj} denote the expected discounted lifetime utilities of an employed worker who chooses not to shirk and to shirk, respectively, in the representative firm. The asset equations of a non-shirking worker and a shirking worker follow in the usual way

$$\theta V^{Nj} = u(\omega^j) - \gamma e^j + s\left(V^U - V^{Nj}\right) \quad (1)$$

$$\theta V^{Sj} = u(\omega^j) + (s+q)\left(V^U - V^{Sj}\right) \quad (2)$$

where $\theta > 0$ is the subjective discount rate, $s > 0$ is an exogenous separation rate and V^U is the expected discounted utility of being unemployed. It follows implicitly from the specification of the asset equations that a worker not complying with the effort norm chooses to supply zero effort.

2.2 Firms

The production function of the representative firm depends on labour input measured in efficiency units:

$$y^j = f(e^j n^j),$$

where $f' > 0$ and $f'' < 0$.[11] Profits of the representative firm are

$$\Pi^j = f(e^j n^j) - w^j n^j$$

The representative firm chooses the wage, w^j, the required effort level, e^j, and firm level employment, n^j. To ensure positive levels of production, the firm must offer a wage-effort package such that $V^{Nj} \geq V^{Sj}$ and to be profit maximizing for the firm this incentive compatibility constraint (or no-shirking condition) must hold as an equality, $V^{Nj} = V^{Sj}$. Using equations 1 and 2 the incentive compatibility constraint can be written as

$$qu(\omega^j) - (\theta + q + s)\gamma e^j - \theta q V^U = 0.$$

The value of being unemployed, V^U, follows from combining the asset equations for non-shirkers and shirkers in all other firms with the asset equation

the firm has to trade off the amount of resources devoted to monitoring and the direct costs of offering a higher wage to elicit more effort of workers.

[11] This holds at the equilibrium employment level. For our model to be consistent with zero long-run pure profits it is assumed that for small values of $e^j n^j$ we have increasing returns to labour, $f''(e^j n^j) > 0$. Hence, we have U-shaped cost curves that allow for zero pure profits at an interior solution. Alternatively, a production function with a fixed labour input requirement, $y^j = f(e^j n^j - \zeta)$, could be specified.